

## Editorials

# Cultivating a Healthy Journal Space

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## Introduction

Price (1963) suggested with his 'fundamental law' that the number of journals tends to double every 10 to 15 years. Although more recent trends seem to suggest a slow-down, the number of scientific journals certainly is the highest it has ever been and growth of numbers continues (Pendlebury 1989, Altman and Broad 2005). While the increasing number of scientific journals undoubtedly reflects the growing body of scientific knowledge, there are reasons for concern about journal proliferation and for quality standards throughout the scientific journal enterprise. For both authors and readers, choosing the right journal medium is a challenge, as there are often many journals available of widely varying quality; neither quality nor target audience are immediately obvious from the cover designs. Reviewers and journal editors face another challenge: the increasing number of articles available makes it more difficult to maintain a state-of-the-art knowledge of a field, which is indispensable to proper assessment of manuscripts. Yet the biggest concern with the sheer number of journals is perhaps the possible degradation of the value in having a paper 'published' in a scientific journal, especially when the manuscript-starved, low-tier journals cannot afford to keep (or are not interested in keeping) up quality standards, lowering the overall bar of scientific journal publications.

This is not a trivial issue, as a scientific journal is the soil in which participants including authors, reviewers, editors and readers plant ideas and grow scientific discussions. Maintaining a fertile and healthy journal space is not only the privilege but also the responsibility of the participants as growers of scientific discussion. For that, what follows is a selection of topics that seem useful especially for those who just began writing to Int J LCA.

## 1 Preparation of a Manuscript

### 1.1 Placing a paper in the continuum of scientific progresses

For the authors writing to an interdisciplinary journal like Int J LCA, of which the readership is with diverse backgrounds, it is especially important to present the study in the context of a broader spectrum. Acknowledging relevant previous discussions when writing the background part of a paper greatly helps readers to understand the paper in the context of continued discussions. In addition, a good literature survey prevents inventing what has already been invented and helps others to recognize the original contribution of the paper.

### 1.2 Robustness and reproducibility

Some early Life Cycle Assessment (LCA) studies not only helped the LCA field to get exposed to broader audiences but also helped to raise the issue of credibility of published LCA studies (see, e.g., Hocking 1991, Wells et al. 1991). A journal that reports different results of similar studies presented by different authors without ensuring critical discussion of why results are different cannot be considered as an intellectually sound journal. When LCA results are repeatedly reported in such a manner, what is at stake is not only the credibility of the article at hand but also that of LCA in general.

Various factors including the data source and quality, the model used, and the system boundaries have a significant effect on LCA results, and these factors should be thoroughly examined in preparing a manuscript to make sure that the same conclusion will be drawn even when the study is carried out by other LCA practitioners. Important steps include the following: 1) when reporting a case study, it is important to compare the results obtained with the results previously reported. In case notable discrepancies are identified while performing such a comparison, the possible causes of such discrepancies need to be clearly identified and discussed, 2) use of unpublished literature and inaccessible data should be avoided as much as possible. Use of such data sources seriously limits the possibility of checking the validity of the results (see also Frischknecht 2004). At a minimum, authors should understand that they might be asked under a confidentiality agreement, if needed, to send some of the key internal data to the reviewers in the course of a peer review process, 3) a sensitivity analysis is recommended to verify whether the major assumptions used and the system boundaries selected do not alter the conclusions. In case they do, either the assumption should be refined or the conclusions redrawn, 4) an uncertainty analysis can further help drawing clearer boundaries in interpreting the results.

### 1.3 Comparative studies and International protocols

Reporting a comparative LCA study demands extra care. Publishing a comparative LCA result may evoke a conflict of interest especially when the products under study are competing in a market. Particular attention should be exerted in performing a comparative study that is sponsored by a company producing one of the competing products. Davison (1989), for instance, showed that studies in favor of new therapies are statistically more likely than other studies to

be sponsored by the companies in a position to supply the new therapies. Friedberg et al. (1999) made a similar observation in the field of cancer research (see Resnik 2000 for a seminal discussion on research bias due to financial interests). These results do not necessarily mean that those studies are all fraudulent. For instance, sponsors who are confident about the superiority of their drugs or therapies may be motivated to commission a comparative study to demonstrate superiority. Other possibilities are that researchers who have obtained supportive results may be more likely to receive encouragement to publish them, while others may be discouraged (see, e.g., the case of Philip Morris in Resnik 2000). In the worst case, a study may be inappropriately conducted for the sake of furthering a sponsor's interests. Much of these nuisances can be better managed by following relevant international protocols in conducting and reporting comparative LCA studies. The ISO 14040 series lays out a series of requirements for comparative studies disclosed to the public. Following such requirements, including the involvement of key stakeholders such as the manufacturers of the competing products to be compared, helps prevent intended or unintended biases.

#### 1.4 Research conduct

It is notable that a peer review process examines primarily the scientific soundness of the reasoning that authors have followed in arriving at conclusions, assuming that the data provided are genuine. There is very little that can be done in the course of a peer review regarding the verification of the raw data supplied by the authors, and that is why, even with all the protocols and safeguard instruments placed in peer review process, it is still the scientists' research ethics and mutual trust that the entire scientific journal space is dependent upon. However, it is notable that research misconducts including falsification and intentional omission of data are not uncommon in the current research environment (see also Martinson et al. 2005 for an eye-opening survey)<sup>1</sup>. Research misconduct is an important topic that covers various issues that are beyond the scope of the current editorial, and readers are encouraged to consult some of the widely accepted guidelines available elsewhere<sup>2</sup>.

#### 1.5 Suitable length of a paper

It is the best interest for a journal to provide quality information as much as possible within a given volume of an issue. An article densely packed with information saves time for the readers and the reviewers and spares rooms for other topics to be presented in the same issue. The Int J LCA has a regular number of 64 pages per issue, and each individual paper should be contained within 8 printed pages. If a paper needs more space, it can be split in parts, but this should be a special occasion. When carefully organized, 8 printed pages are in most cases enough to convey a message. As it is much

harder for the authors to reorganize a paper once it is fully written, it is advisable to consider the length of a manuscript well in advance.

Needless to say, authors should make every effort to improve the clarity of the presentation and the quality of language. For the authors whose mother tongue is other than English, it is highly recommended to check with a native English speaker before submitting a manuscript. Authors are also encouraged to consult the 'Guidelines To the Authors' that can be found from the web site of this journal<sup>3</sup>. Other useful readings in preparing a manuscript for Int J LCA include Heijungs (2005) and Hunkeler (2005).

## 2 Peer Review Phase

After a manuscript is finalized and submitted to a journal, authors are given an opportunity to communicate with the responsible editors and reviewers in the course of a peer review process. A peer review process is probably the most delicate phase in a manuscript's life-cycle that involves multiple actors and intensive communication between the actors, which often needs a careful coordination.

#### 2.1 Actors and their roles and responsibilities

Authors, reviewers, editors and readers have different roles and motivations in participating in the discussion through a journal. Authors contribute their valuable scientific works and share their knowledge and experiences with others, which are the intellectual fuel for scientific progresses. Publishing an article as an author is not only a privilege as a scholar but also an honor and important credential, especially within an academic environment. Anonymous reviewers, who are recognized experts in the focal areas of the article to be reviewed, are those willing to share their valuable time and expend effort to maintain a sound journal space. Reviewers not only help the responsible editor to make an editorial decision but also help authors to sharpen their arguments and to improve the quality of the publications.

An editor is responsible for mediating sound communication between the author and the reviewers and for ultimately deciding the fate of a paper. Editors must commit themselves to unbiased decisions at all points, and authors and reviewers must trust the editor's willingness to reconcile any conflicts identified during the review process. For that, there are not only the subject editors but also the Editor-in-Chief who oversees the whole process who may halt the publication process if necessary. With no trust between editors, reviewers and authors, a review procedure can easily break down.

It is extremely important that the editor and the reviewers make every effort to expedite the review process while maintaining a reasonable turnover period. Otherwise, Int J LCA cannot serve as a fresh communication medium given the speed of LCA developments. In order to facilitate a quality review, a reviewer may ask the authors to provide additional information. However, as an LCA often deals with proprietary information and in-house data, reviewers should understand that it may not be always possible to obtain all the

<sup>1</sup> See Abbott (1999) and Hartemink (2000) for examples of historical scandals and available guidelines, and see Judson (2004) for a seminal work on the issue.

<sup>2</sup> See e.g., US office of Research integrity ([ori.dhhs.gov/regguide.htm](http://ori.dhhs.gov/regguide.htm)) and Danish Committee on Scientific Dishonesty ([www.forskraed.dk/spec-udv/uuu/](http://www.forskraed.dk/spec-udv/uuu/))

<sup>3</sup> <http://www.scientificjournals.com/sj/pdf/lca/authorGuidelines.pdf>

information requested. When submitting a revised version, an author should make every effort to help reviewers and the editor to easily recognize relevant alterations by providing a survey of the changes that have been made during the revision. A manuscript submitted is confidential information, and it should be clearly understood that the reviewer is asked as an individual to complete the review; a reviewer is not expected to discuss the manuscript under review with other colleagues or students. In addition, a reviewer must not take the advantage of having been able to access the information acquired during the review process earlier than other readers. These requirements equally apply to editors.

## 2.2 Engaging in the communication

In participating in the discussion mediated by an editor during the peer review phase, it is important for the author and the reviewer to deal respectfully with one another. There are many situations, regardless of the fate of the paper at hand, in which the author and reviewer experience an unpleasant moment during the review process when necessary respect is lacking. Comments and responses between the author and the reviewer should be written in a constructive manner avoiding emotional reactions or sarcastic expressions. It is also important to acknowledge not only the weakness but also the values and the strengths in the other's views in the course of reviewer-author communication.

## 2.3 Safeguard instruments

Even with all these caveats, there still is a chance of arriving at a dead-end in the review process especially when there is a conflict of interests between a reviewer and an author. That's why most of journals ask the authors to clarify any potential conflict of interests and to list the names of potential reviewers whom the authors wish to avoid. It is important that this safeguard instrument shall not be abused to avoid potential reviewers who are known to have different scientific views than the authors. It is certainly true that a number of distinctive methodologies and scientific views have been evolved and coexist in the field of LCA. However, LCA practitioners, at the same time, have constantly tried to find a possible integration or a complementary use of heterogeneous ideas, where communication across the competing views is essential. In the same vein, when authors are asked to provide names of potential reviewers, these should not be the author's friends and direct partners. In any case, the list of potential referees provided by an author is used only as a reference, and in the end it is the responsibility of an editor to decide whom to solicit reviews.

If an author feels that a review was not done in a fair manner, the author may file a claim to the responsible editor. On the reception of such claim, the responsible editor may, in consultation with the Editor-in-Chief, initiate a consultation review. A consultation review is devised not to disadvantage the authors in an one-way-blind review process, where a third party personnel is appointed to review all the correspondences took place in the previous review and to verify whether the review process in question was appropriately carried out. Needless to say, consultation reviews should not be asked too often.

## 3 Communication After the Publication

Once published, a paper is exposed to a much broader audience, entering another phase of communication over the paper. An author may be directly contacted by a reader or may be invited to provide a reply to a letter to the editor. In case a major error is detected in the course of post-publication dialogue, the author of the respective paper may ask the editor to retract the paper in question, or the Editor-in-Chief may cancel the paper. Such an occasion, though should be minimized, can be viewed as the evidence that the journal's self-correcting function is in service.

Engaging in the discussion between an author and a reader in the form of a letter and a reply to be displayed in the journal, it is again important to highlight both strengths and weaknesses of the others' views, so that the general readers can be more selective in critically approaching the original article. Submitting letters to the editor is highly encouraged as the variety of views from the reader helps keeping a journal more lively and healthy.

## 4 Closing Remarks

Int J LCA has played a crucial role in the development of LCA over the past decade. As an interdisciplinary field, LCA needs a well organized medium of communication, where a variety of perspectives are presented in a balanced manner. A journal is nothing but a medium of communication between the participants, and its health is entirely at the hands of the participants. I wish that Int J LCA maintains its remarkable fertility and health with constructive criticism and active participation by the author, reviewer, editor and the reader.

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